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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,102

03/11/2004

Hisashi Umeda

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5914

7590 10/26/2007
Patrick G. Burns, Esq.
GREER, BURNS & CRAIN, LTD.
Suite 2500
300 South Wacker Dr.
Chicago, IL 60606

EXAMINER

RICKMAN, HOLLY C

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

10/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/798,102	Applicant(s) UMEDA ET AL.	
	Examiner Holly Rickman	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-17,31,33-38,41 and 43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-17,31,33-38,41,43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/12/07 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 31, 33-38 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are rendered indefinite by the limitations requiring "a Pt content of the first ferromagnetic layer is smaller than a Pt content of the magnetic layer by at least 7 atomic % or, on the order of the atomic % of impurities." It is not clear from this limitation whether the Pt content of the ferromagnetic layer is on the order of the atomic % of impurities or whether the Pt content of the magnetic layer is on the order of the atomic % of impurities.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

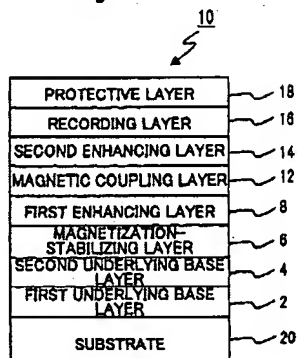
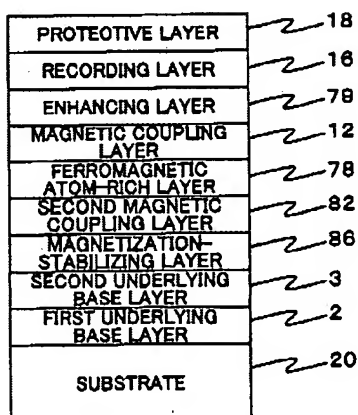
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The rejection of claims 31-38 and 43-44 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamanaka et al. (US 2002/0064689) is withdrawn in view of Applicant's amendments.

7. Claims 1, 5-17, and 41 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamanaka et al. (US 2002/0064689).

Yamanaka et al. disclose a magnetic recording medium and apparatus having the following structures as shown in Figures 1 and 13:

Art Unit: 1794

Fig. 1**Fig. 13**

The reference teaches that the magnetic layers are antiferromagnetically coupled across the coupling layers. The reference also teaches that the enhancing layers (corresponding to the claimed bonding layers) are ferromagnetically coupled with the adjacent magnetic layer. See paragraphs 0022, 0024, 0028, 0053, 0055, 0090-0094, 0109, 0111. With respect to the newly claimed limitations directed to the compositions of the ferromagnetic layer and the magnetic layer, Yamanaka et al. teaches a ferromagnetic atom-rich layer having a CoPt_{17} layer in contact with a CrMo underlayer, a Ru coupling layer and an overlying $\text{CoCrPt}_{12}\text{B}$ recording layer (see

Art Unit: 1794

'Third Embodiment' paragraphs [0105]-[0111]. The reference also teaches a ferromagnetic atom-rich layer formed from CoCrPt17B and an overlying recording layer formed from CoCrPt12B. The examiner takes the position that the Cr atoms present in the underlayer that are in contact with the surface of the CoPt layer meet the claim limitation requiring a CoCrPt or CoCrPt-M alloy.

The reference is silent with regard to the claimed relationship between the dynamic coercivities of each of the antiferromagnetically coupled magnetic layers. However, the examiner maintains that the structure taught by Yamamaka et al. inherently satisfies these features of the claims. The reference teaches a recording medium that is substantially the same in structure and composition as that claimed by Applicant. In addition, the reference shows hysteresis curves for the structures shown above (see Fig 1 and 13) which are substantially the same as shown by Applicant. The hysteresis curves shown by Yamanaka et al. are shown below:

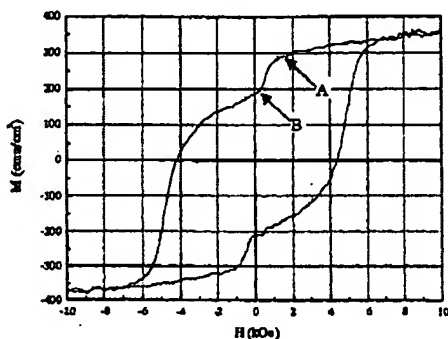
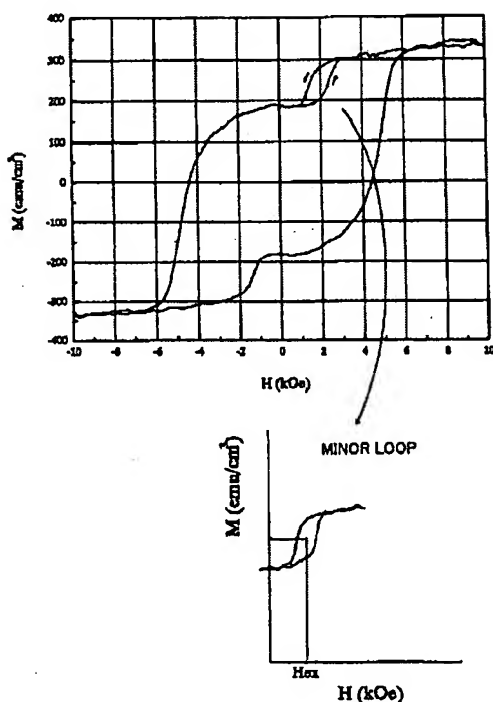
Fig. 14

Fig. 11



Thus, the examiner maintains that the recording medium having the structure, composition, and magnetic characteristics as shown by the prior art would inherently satisfy the claim limitations directed to dynamic coercivities, static coercivities, the relationship between dynamic and static coercivity, and the relationship between anisotropic field of the respective magnetic layers.

It has been held that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC §103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

Response to Arguments

8. Applicant's arguments filed 10/12/07 have been fully considered but they are not persuasive.

Applicant argues that the limitations of the claims directed to dynamic coercivities of the claimed ferromagnetic and magnetic layers is not inherent in the invention disclosed by Yamanaka et al. because Yamanaka et al. fails to teach the claimed magnetic and ferromagnetic layer composition. Applicant maintains that Yamanaka et al. teaches Co₆₄Cr₂₀Pt₁₂B₄ and Co₈₃Cr₂₀Pt₁₇B, respectively and the Pt content difference in At% is "7 At.% or less between the recording layer and the ferromagnetic atom-rich layer.

Applicant's arguments are not relevant to claims 1, 5-17 and 41 because these claims do not specify any particular amount of difference between the Pt contents of the magnetic layer and the ferromagnetic layer.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Holly Rickman', with a stylized flourish at the end.

Holly Rickman
Primary Examiner
Art Unit 1773